

Pondo Compare

time limit per test: 2 seconds (8 seconds for Python)

memory limit per test: 500 megabytes

input: standard input

output: standard output

points: 100 · problem code: pondocompare

You are given a string s of length n and q queries.

Each query gives four integers l_1, r_1, l_2, r_2 . Pondo wants to know whether the substring $s[l_1..r_1]$ is lexicographically less than or equal to $s[l_2..r_2]$ (1-indexed, inclusive).

A string a is lexicographically smaller than b if they first differ at a position where a has the smaller character, or if a is a proper prefix of b .

Input

The first line contains two integers n and q .

The second line contains the string s .

Each of the next q lines contains four integers l_1, r_1, l_2, r_2 .

Output

Print q lines. The i -th line should be `YES` if $s[l_1..r_1] \leq s[l_2..r_2]$ for the i -th query, and `NO` otherwise.

Constraints

- $1 \leq n \leq 5 \times 10^5$
- $1 \leq q \leq 10^6$
- $1 \leq l_1 \leq r_1 \leq n$
- $1 \leq l_2 \leq r_2 \leq n$
- s consists only of lowercase English letters.

Example 1

Input

```
10 4
abcdfabcde
1 5 6 10
1 4 6 9
1 10 1 10
6 9 1 5
```

Output

```
NO
YES
YES
YES
```

Explanation

- `abcdf` is not less than or equal to `abcde`.
- `abcd` is less than or equal to `abcd`.
- `abcdfabcde` is less than or equal to itself.
- `abcd` is a proper prefix of `abcdf`.

Example 2

Input

```
6 5
banana
2 6 1 6
1 3 4 6
2 4 5 6
1 6 1 6
3 3 2 2
```

Output

```
YES
NO
YES
YES
NO
```

Explanation

- `anana` is smaller than `banana` .
- `ban` is larger than `ana` .
- `ana` is smaller than `na` .
- `banana` is equal to itself.
- `n` is larger than `a` .